CLAIMS

[Claim(s)]

[Claim 1] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of one channel is chosen from the signal of the one above-mentioned transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of this receiving terminal equipment When the control signal which should change the channel chosen by the above-mentioned transport decoder to another channel from the channel chosen now is received The digital broadcast record system characterized by having a detection means to detect whether the above-mentioned recording equipment is recording the signal of the channel chosen now, and an alarm display means to display this when this detection means detects what currently the above-mentioned recording equipment is recording.

[Claim 2] Digital broadcast is received. The signal of one transponder is chosen from the received digital broadcast signal. The signal of two or more channels is chosen from the signal of the one above-mentioned transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder outputted from a port different, respectively and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs. In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of this receiving terminal equipment When the control signal which should change the transponder chosen by the above-mentioned tuner to another transponder from the transponder chosen now is received A detection means to detect whether the above-mentioned recording equipment is recording the signal of one channel of the transponders chosen now, The digital broadcast record system characterized by having an alarm display means to display this when this detection means detects what currently the above-mentioned recording equipment is recording.

[Claim 3] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A

predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. The 1st timer of the above and the 2nd timer at least one of timers] The digital broadcast record system characterized by holding the reservation information reserved in the timer of another side.

[Claim 4] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the 1st timer of the above has the input of program recording reservation The digital broadcast record system characterized by having a detection means to detect whether the reservation execution time of the program recording reservation concerned is compared with the reservation execution time of the program recording reservation already performed by the 2nd timer of the above, and duplication of program recording time arises.

[Claim 5] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When the 2nd timer of the above has the input of program recording reservation The digital broadcast record system characterized by having a detection means to detect whether the reservation execution time of the program recording reservation already performed by the reservation execution time, the 1st timer of the above, or the 2nd timer of the program recording reservation concerned and program display reservation is compared, and duplication of reservation execution time arises.

[Claim 6] Digital broadcast is received. The signal of a predetermined transponder is chosen from the received digital broadcast signal. The signal of a predetermined channel is chosen from the

signal of the transponder which the tuner to output and this tuner output. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. The receiving terminal equipment which has an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs, In the digital broadcast record system which consists of recording equipment which has the Records Department which records the output signal of the above-mentioned receiving terminal equipment A detection means to detect whether it is in a state with the above-mentioned receiving terminal equipment able to output the signal of the recording purpose program just before the recording start of the program recording reserved by the timer which performs program recording reservation of digital broadcast, and the above-mentioned timer, The digital broadcast record system characterized by having an alarm display means to display this when it detects that it is in a state with the above-mentioned receiving terminal equipment unable for this detection means to output the signal of the recording purpose program.

Claim 7] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast record system which consists of recording equipment which has the 2nd timer which performs the Records Department which records the output signal of the above-mentioned receiving terminal equipment and program recording reservation of analog broadcasting, or program recording reservation of digital broadcast. When program recording reservation of digital broadcast is performed to the 2nd timer of the above The check of whether there is no broadcast time of the recording purpose program just before the recording start by the program recording reservation concerned, and there is any change in a broadcast channel is performed to the above-mentioned receiving terminal equipment. It is the digital broadcast record system characterized by having a means to change the information on the program recording reservation concerned of the 2nd timer of the above when there is change.

Claim 8] The signal of a predetermined channel is chosen and outputted from the signal of the transponder which the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a predetermined transponder from the received digital broadcast signal, and this 1st tuner output. Moreover, the information (EPG information) about the broadcasting hours of a program and a broadcast channel is extracted from the signal of a transponder. The signal of the channel which the transport decoder to output and this transport decoder output is decoded. [an output means to output the analog signal which the digital signal or the above-mentioned decoder which the decoder changed into an analog signal and the above-mentioned transport decoder output outputs and program recording reservation of digital broadcast, program display reservation, or program recording reservation of analog broadcasting] The receiving terminal equipment which has the 1st timer to perform, and analog broadcasting are received. A predetermined channel is chosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast

ecord system which consists of recording equipment which has the 2nd timer which performs he Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. An EPG information storage means for it to be repared in the above-mentioned recording equipment, to acquire EPG information from the bove-mentioned receiving terminal equipment, and to memorize this, When it detects that this :PG information storage means was searched and there was change to the broadcast time or the roadcast channel of the digital program by which program recording reservation is performed to he 2nd timer of the above, The digital broadcast record system characterized by having a means o change the information on the program recording reservation concerned of the 2nd timer of he above.

Claim 9] The signal of a predetermined channel is chosen and outputted from the signal of the ransponder which the 1st tuner which receives digital broadcast, and chooses and outputs the ignal of a predetermined transponder from the received digital broadcast signal, and this 1st uner output. Moreover, the information (EPG information) about the broadcasting hours of a rogram and a broadcast channel is extracted from the signal of a transponder. The signal of the hannel which the transport decoder to output and this transport decoder output is decoded. [an utput means to output the analog signal which the digital signal or the above-mentioned decoder /hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation, or program recording reservation of analog broadcasting] The receiving terminal quipment which has the 1st timer to perform, and analog broadcasting are received. A redetermined channel is chosen from the received analog broadcasting signal. The output signal f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs he Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. When the broadcasting hours of the digital program /hich the above-mentioned receiving terminal equipment under present recording outputs in said ecording equipment extend, It is detected whether the time to the end of a program of the rogram concerned overlaps the broadcasting hours of the program by which program recording eservation or program display reservation is made at the 1st or 2nd timer of the above. The igital broadcast record system characterized by having a control means to perform the ecording or a display of a program according to a predetermined priority when overlapping.

ETAILED DESCRIPTION

Detailed Description of the Invention]

0001]

Field of the Invention] This invention relates to the digital broadcast record system which onsists of recording equipments, such as VTR which records the reproduction signal outputted om the receiving terminal equipment (it is henceforth called Set Top Box =STB for short) which eceives digital broadcast and outputs that reproduction signal, and this STB.

0002]

Description of the Prior Art] Drawing 16 is the figure showing the digital broadcast record ystem which consists of recording equipments 130, such as VTR which records the reproduction ignal outputted from Set Top Box (STB) 110 which receives the conventional digital broadcast nd outputs the reproduction signal, and STB110 on the Records Department, and is set to a gure. The antenna with which 111 receives digital broadcast, and 112 are the 1st tuner which hooses and outputs one of two or more transponders of the digital broadcast which the antenna

11 received. The transport decoder which 113 chooses one of two or more channels contained n one transponder which a tuner 112 outputs, and is outputted. 114 is an AV decoder which eproduces and outputs the digital signal of the specific channel which the transport decoder 113 utputs to the image of an analog, and an audio signal. Moreover, 115 is the image of the digital ignal which the transport decoder 113 outputs, or the analog which the AV decoder 114 outputs, nd an output means to output an audio signal outside. 116 is a system controller which controls peration of the 1st tuner 112, the transport decoder 113, and the output means 115. 117 is a ser input part into which a user inputs control signals, such as channel selection, program ecording reservation, and program display reservation. 118 is the 1st timer which outputs the ontrol signal for reservation execution to the system controller 116, when the program recording eservation from the user input part 117 and program display reservation are received, this is eld and reservation time comes.

0003] Set Top Box (STB) 110 is constituted by the 1st tuner 112, the transport decoder 113, he AV decoder 114, the output means 115, the system controller 116, and the 1st timer 118. 120 s a monitor which receives the image of the analog which the AV decoder 114 outputs, and an udio signal, and displays and outputs an image and a sound. The antenna with which 131 eceives analog broadcasting, and 132 are the 2nd tuner which chooses and outputs one of two r more channels of the analog broadcasting which the antenna 131 received. 133 is the Records epartment which records the image of the digital signal which the transport decoder 113 utputted from the signal which the 2nd tuner 132 outputs, or the output means 115 of STB110 utputs, or the analog which the AV decoder 114 outputs, and an audio signal. 134 is the 2nd uner 132 and a system controller which controls operation of the Records Department 133. 135 s a user input part into which a user inputs control signals, such as a recording start, a recording top, and program recording reservation. 136 is the 2nd timer which outputs the control signal for eservation execution to the system controller 134, when the control signal from the user input art 135 is received, this is held and reservation time comes.

0004] Next, operation of the conventional digital broadcast record system is explained.

0005] A tuner 112 chooses and outputs one of two or more transponders which the antenna 111 eceived. The program of 4–6 channels is usually included in the transponder, and the transport ecoder 113 chooses and extracts one of two or more channels contained in the transponder eceived from the tuner 112, and outputs this to the AV decoder 114. The AV decoder 114 eproduces the signal from the transport decoder 113 to an image and a sound, and outputs it to onitor 120 grade. When recording the program of digital broadcast, the signal which the ransport decoder 113 outputs, or the signal outputted from the AV decoder 114 is outputted to ecording equipment 130 by the output means 115, and recording equipment 130 records the aceived signal on the Records Department 133. The Records Department 133 performs digital acord, when recording the signal which the transport decoder 113 outputs, and when recording ne signal outputted from the AV decoder 114, it performs analog record. When recording digital roadcast using a timer While performing program recording reservation which includes nformation, including the start time of the program which asks for recording from the user input art 117, finish time, a broadcast channel, etc., in the 1st timer 118 by the side of STB110 rogram recording reservation which includes information, including the start time of recording, nish time, etc., in the 2nd timer 136 of recording equipment 130 from the user input part 135 is erformed.

0006] The 1st timer 118 outputs the control signal for reservation execution to the system ontroller 116, when the program recording reservation information that it was inputted is held nd managed and the start time of the recording purpose program comes. The system controller 16 controls the 1st tuner 112 and the transport decoder 113 according to the control signal om the 1st timer 118, and chooses the channel of the recording purpose program. The signal hich the transport decoder 113 outputs, or the signal outputted from the AV decoder 114 is

utputted to recording equipment 130 by the output means 115. On the other hand, by the ecording equipment 130 side, when the 2nd timer 136 held and manages the recording eservation information that it was inputted and the start time of timed recording comes, the ontrol signal for reservation execution is outputted to the system controller 134. the system ontroller 134 operates the Records Department 133 according to the control signal from the 2nd imer 136 — the signal from the output means 115 of STB110 — digital one — or analog record s carried out.

0007] In that in which the system controller of STB and the system controller of recording quipment operate independently like the conventional digital broadcast record system shown in rawing 16 , respectively When recording a digital program by timer reservation, as mentioned bove, both the timer by the side of STB and the timer by the side of recording equipment must e set up independently, respectively, and this serves as very troublesome work for a user. on he other hand — both the timer by the side of STB, and the timer by the side of recording quipment — although — while being able to perform registration of recording reservation of a igital program If it has composition which exchanges a control signal between the system ontroller of STB, and the system controller of recording equipment and is made to interlock oth system controllers The timed recording of a digital program can be made by making program ecording reservation with either the timer by the side of STB, and the timer by the side of ecording equipment. When [namely,] program recording reservation is made at the timer by the ide of STB The system controller by the side of STB embraces the control signal for the eservation execution which the timer by the side of STB outputs. Control the 1st tuner 112 and ne transport decoder 113, and the channel of the recording purpose program is chosen. While utputting the signal which the transport decoder 113 outputs, or the signal outputted from the .V decoder 114 to recording equipment 130 by the output means 115 output a control signal to ne system controller by the side of recording equipment, and the system controller by the side f recording equipment operates the Records Department 133 according to the control signal om the system controller by the side of STB — the signal from the output means 115 of TB110 — digital one — or analog record is carried out.

0008] When [moreover,] program recording reservation is made at the timer by the side of ecording equipment The system controller by the side of recording equipment embraces the ontrol signal for the reservation execution which the timer by the side of recording equipment utputs. the Records Department 133 — the signal from the output means 115 of STB110 — igital one — or while making it operate so that analog record may be carried out Output a ontrol signal to the system controller by the side of STB, and the system controller by the side f STB controls the 1st tuner 112 and the transport decoder 113 according to the control signal om the system controller by the side of recording equipment, and chooses the channel of the ecording purpose program. The signal which the transport decoder 113 outputs, or the signal utputted from the AV decoder 114 is outputted to recording equipment 130 by the output eans 115. As mentioned above, the timed recording of a digital program is possible by erforming program recording reservation for the system controller by the side of STB and ecording equipment in an interlocking ****** digital broadcast record system to either the timer / the side of STB, or the timer by the side of recording equipment.

0009]

Problem to be solved by the invention] Since the conventional digital broadcast record system is onstituted as mentioned above and the output of the transport decoder of STB is used for both ne monitor display and the output for recording, In the midst of recording the output from the utput means of STB with recording equipment, the control signal which chooses a display hannel from the user input part of STB is inputted. When the channel chosen by this control gnal differs from the channel which the present transport decoder is choosing and outputting nd the channel which a transport decoder chooses and outputs changes The output from the

output means of STB also changes and un-arranging [that the program for which it asks, and a different program will be recorded] arises. Moreover, the time of onset of the program by which recording reservation was made arrives at a timer in the midst of carrying out the monitor display of the digital program. When the channel of this program by which recording reservation was made is a different channel from the program by which the present monitor display is carried out, When the channel which a transport decoder chooses and outputs for execution of recording reservation changes, un-arranging [that the program by which the monitor display is carried out will change suddenly] arises.

[0010] If a transport decoder is the thing of composition of outputting from a port which chooses the signal of two or more channels from the signal of one transponder, and is different, respectively here Since two different channels can be simultaneously outputted if the transponder is the same even if channels differ Although it does not produce above un-arranging, since the channel from which a transponder differs cannot be simultaneously outputted even if it is such a transport decoder, when the transponders of the channel of a monitor display and the output for recording differ, the same un-arranging it as **** will arise.

[0011] Moreover, [a timer does not have duplication as compared with the already reserved contents, when reservation is inputted, when execution of each reservation is possible for it, it has the composition of receiving the inputted reservation, but] usually both the conventional timer by the side of STB, and the timer by the side of recording equipment — although — [the digital broadcast record system of composition of that registration of recording reservation of a digital program can be performed] Since the timer by the side of STB and the timer by the side of recording equipment are what receives reservation independently, respectively, The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation or] There is a problem that it is difficult to avoid effectively, about that the channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap, and recording or a display cannot be performed as reservation.

[0012] Before it was not made in order that this invention might cancel the above-mentioned problem, and a user knows, the signal outputted to recording equipment changes from STB. It aims at offering the digital broadcast record system which can avoid un-arranging [that a different program from the program which asks for recording will be recorded].

[0013] moreover, this invention — both the timer by the side of STB, and the timer by the side of recording equipment — although — [it is the digital broadcast record system of composition of that registration of recording reservation of a digital program can be performed, and] The recording time of the program recording separately reserved in each timer overlaps, and [cannot record as reservation or] The channels of the digital program by which recording reservation was made by the timer by the side of the digital program by which display reservation was made by the timer by the side of STB, and recording equipment differ, and broadcasting hours overlap. It aims at offering the digital broadcast record system which can avoid effectively that recording or display cannot be performed as reservation.

[0014] Moreover, this invention aims at offering the digital broadcast record system by which a user can realize the digital broadcast record system which can avoid duplication reservation of program recording effectively.

[0015] Moreover, this invention against a user's will [a program is no longer displayed suddenly while on display, or] It aims at offering the digital broadcast record system which can avoid un-arranging [that the program of the intention of recording is no longer recorded, and timer reservation becomes impracticable against a user's will].

[0016] moreover, this invention — both the timer by the side of STB, and the timer by the side of recording equipment — although — [it is the digital broadcast record system of composition

if that registration of recording reservation of a digital program can be performed, and] It aims it offering the digital broadcast record system which can record the recording purpose program certainly based on the control signal for the reservation execution which the timer by the side of ecording equipment outputs.

0017] Moreover, this invention aims at offering the digital broadcast record system which can erform automatic more desirable program recording or a program display, when there is xtension of the broadcasting hours of the digital program under record and the broadcasting ours of a program and duplication by which timer reservation was made arise.

0018]

Means for solving problem] [the digital broadcast record system concerning this invention Claim 1)] in order to solve the above-mentioned technical problem Digital broadcast is received. he signal of one transponder is chosen from the received digital broadcast signal. The signal of ne channel is chosen from the signal of the one above-mentioned transponder which the tuner o output and this tuner output. The signal of the channel which the transport decoder to output nd this transport decoder output is decoded. The receiving terminal equipment which has an utput means to output the analog signal which the digital signal or the above-mentioned decoder hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs, In the digital broadcast record system which consists of recording equipment hich has the Records Department which records the output signal of this receiving terminal quipment When the control signal which should change the channel chosen by the above-entioned transport decoder to another channel from the channel chosen now is received It has detection means to detect whether the above-mentioned recording equipment is recording the ignal of the channel chosen now, and an alarm display means to display this when this detection eans detects what the above-mentioned recording equipment is recording.

0019] [moreover, the digital broadcast record system concerning this invention (Claim 2)] igital broadcast is received. The signal of one transponder is chosen from the received digital roadcast signal. The signal of two or more channels is chosen from the signal of the one above-entioned transponder which the tuner to output and this tuner output. The signal of the channel hich the transport decoder outputted from a port different, respectively and this transport ecoder output is decoded. The receiving terminal equipment which has an output means to utput the analog signal which the digital signal or the above-mentioned decoder which the ecoder changed into an analog signal and the above-mentioned transport decoder output utputs, In the digital broadcast record system which consists of recording equipment which has he Records Department which records the output signal of this receiving terminal equipment hen the control signal which should change the transponder chosen by the above-mentioned uner to another transponder from the transponder chosen now is received A detection means to etect whether the above-mentioned recording equipment is recording the signal of one channel f the transponders chosen now, When this detection means detects what the above-mentioned ecording equipment is recording, it has an alarm display means to display this.

0020] [moreover, the digital broadcast record system concerning this invention (Claim 3)] igital broadcast is received. The signal of a predetermined transponder is chosen from the eceived digital broadcast signal. The signal of a predetermined channel is chosen from the signal f the transponder which the 1st tuner to output and this 1st tuner output. The signal of the hannel which the transport decoder to output and this transport decoder output is decoded. [an utput means to output the analog signal which the digital signal or the above-mentioned decoder hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation or program recording reservation of analog broadcasting] The receiving terminal quipment which has the 1st timer to perform, and analog broadcasting are received. A redetermined channel is chosen from the received analog broadcasting signal. The output signal

f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs he Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. The reservation information on the 1st timer of the bove and the 2nd timer by which one of timers was reserved at least in the timer of another ide is also held.

0021] [moreover, the digital broadcast record system concerning this invention (Claim 4)])igital broadcast is received. The signal of a predetermined transponder is chosen from the eceived digital broadcast signal. The signal of a predetermined channel is chosen from the signal f the transponder which the 1st tuner to output and this 1st tuner output. The signal of the hannel which the transport decoder to output and this transport decoder output is decoded. [an utput means to output the analog signal which the digital signal or the above-mentioned decoder /hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation, or program recording reservation of analog broadcasting] The receiving terminal quipment which has the 1st timer to perform, and analog broadcasting are received. A redetermined channel is chosen from the received analog broadcasting signal. The output signal f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs he Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. When the 1st timer of the above has the input of rogram recording reservation The reservation execution time of the program recording eservation concerned is compared with the reservation execution time of the program recording eservation already performed by the 2nd timer of the above, and it has a detection means to etect whether duplication of program recording time arises.

0022] [moreover, the digital broadcast record system concerning this invention (Claim 5)] ligital broadcast is received. The signal of a predetermined transponder is chosen from the eceived digital broadcast signal. The signal of a predetermined channel is chosen from the signal f the transponder which the 1st tuner to output and this 1st tuner output. The signal of the hannel which the transport decoder to output and this transport decoder output is decoded. [an utput means to output the analog signal which the digital signal or the above-mentioned decoder /hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation, or program recording reservation of analog broadcasting] The receiving terminal quipment which has the 1st timer to perform, and analog broadcasting are received. A redetermined channel is chosen from the received analog broadcasting signal. The output signal f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs ne Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. When the 2nd timer of the above has the input of rogram recording reservation The reservation execution time of the program recording eservation already performed by the reservation execution time, the 1st timer of the above, or ne 2nd timer of the program recording reservation concerned and program display reservation is ompared, and it has a detection means to detect whether duplication of reservation execution me arises.

0023] [moreover, the digital broadcast record system concerning this invention (Claim 6)] igital broadcast is received. The signal of a predetermined transponder is chosen from the

eceived digital broadcast signal. The signal of a predetermined channel is chosen from the signal f the transponder which the tuner to output and this tuner output. The signal of the channel hich the transport decoder to output and this transport decoder output is decoded. The eceiving terminal equipment which has an output means to output the analog signal which the igital signal or the above-mentioned decoder which the decoder changed into an analog signal nd the above-mentioned transport decoder output outputs, In the digital broadcast record ystem which consists of recording equipment which has the Records Department which records ne output signal of the above-mentioned receiving terminal equipment A detection means to etect whether it is in a state with the above-mentioned receiving terminal equipment able to utput the signal of the recording purpose program just before the recording start of the program ecording reserved by the timer which performs program recording reservation of digital roadcast, and the above-mentioned timer, This detection means is equipped with an alarm isplay means to display this when it detects that it is in a state with the above-mentioned eceiving terminal equipment unable to output the signal of the recording purpose program.

)024] [moreover, the digital broadcast record system concerning this invention (Claim 7)] The ignal of a predetermined channel is chosen and outputted from the signal of the transponder hich the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a redetermined transponder from the received digital broadcast signal, and this 1st tuner output. loreover, the information (EPG information) about the broadcasting hours of a program and a roadcast channel is extracted from the signal of a transponder. The signal of the channel which ne transport decoder to output and this transport decoder output is decoded. [an output means o output the analog signal which the digital signal or the above-mentioned decoder which the ecoder changed into an analog signal and the above-mentioned transport decoder output utputs and program recording reservation of digital broadcast, program display reservation, or rogram recording reservation of analog broadcasting] The receiving terminal equipment which as the 1st timer to perform, and analog broadcasting are received. A predetermined channel is hosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output nd the 2nd tuner of the above Or it sets to the digital broadcast record system which consists f recording equipment which has the 2nd timer which performs the Records Department which ecords the output signal of the above-mentioned receiving terminal equipment and program ecording reservation of analog broadcasting, or program recording reservation of digital roadcast. When program recording reservation of digital broadcast is performed to the 2nd timer f the above The check of whether there is no broadcast time of the recording purpose program ist before the recording start by the program recording reservation concerned, and there is any hange in a broadcast channel is performed to the above-mentioned receiving terminal quipment, and when there is change, it has a means to change the information on the program ecording reservation concerned of the 2nd timer of the above.

)025] [moreover, the digital broadcast record system concerning this invention (Claim 8)] The gnal of a predetermined channel is chosen and outputted from the signal of the transponder hich the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a redetermined transponder from the received digital broadcast signal, and this 1st tuner output. loreover, the information (EPG information) about the broadcasting hours of a program and a roadcast channel is extracted from the signal of a transponder. The signal of the channel which ne transport decoder to output and this transport decoder output is decoded. [an output means o output the analog signal which the digital signal or the above-mentioned decoder which the ecoder changed into an analog signal and the above-mentioned transport decoder output utputs and program recording reservation of digital broadcast, program display reservation, or rogram recording reservation of analog broadcasting] The receiving terminal equipment which as the 1st timer to perform, and analog broadcasting are received. A predetermined channel is hosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output

ınd the 2nd tuner of the above Or it sets to the digital broadcast record system which consists f recording equipment which has the 2nd timer which performs the Records Department which ecords the output signal of the above-mentioned receiving terminal equipment and program ecording reservation of analog broadcasting, or program recording reservation of digital roadcast. An EPG information storage means for it to be prepared in the above-mentioned ecording equipment, to acquire EPG information from the above-mentioned receiving terminal quipment, and to memorize this. This EPG information storage means is searched, and when it letects that there was change to the broadcast time or the broadcast channel of the digital rogram by which program recording reservation is performed to the 2nd timer of the above, it as a means to change the information on the program recording reservation concerned of the nd timer of the above.

0026] [moreover, the digital broadcast record system concerning this invention (Claim 9)] The ignal of a predetermined channel is chosen and outputted from the signal of the transponder hich the 1st tuner which receives digital broadcast, and chooses and outputs the signal of a redetermined transponder from the received digital broadcast signal, and this 1st tuner output. loreover, the information (EPG information) about the broadcasting hours of a program and a roadcast channel is extracted from the signal of a transponder. The signal of the channel which he transport decoder to output and this transport decoder output is decoded. [an output means o output the analog signal which the digital signal or the above-mentioned decoder which the ecoder changed into an analog signal and the above-mentioned transport decoder output utputs and program recording reservation of digital broadcast, program display reservation, or rogram recording reservation of analog broadcasting] The receiving terminal equipment which as the 1st timer to perform, and analog broadcasting are received. A predetermined channel is hosen from the received analog broadcasting signal. The output signal of the 2nd tuner to output nd the 2nd tuner of the above Or it sets to the digital broadcast record system which consists f recording equipment which has the 2nd timer which performs the Records Department which ecords the output signal of the above-mentioned receiving terminal equipment and program ecording reservation of analog broadcasting, or program recording reservation of digital roadcast. When the broadcasting hours of the digital program which the above-mentioned eceiving terminal equipment under present recording outputs in said recording equipment extend, hen the time to the end of a program of the program concerned detects and overlaps [whether he broadcasting hours of the program by which program recording reservation or program display eservation is made are overlapped, and] the 1st or 2nd timer of the above, it has a control ieans to perform the recording or a display of a program according to a predetermined priority.

0027]

Mode for carrying out the invention]

orm 1. drawing 1 of operation is the figure showing the composition of the digital broadcast ecord system by the form 1 of operation of this invention, and is set to a figure. The antenna ith which 11 receives digital broadcast, and 12 are the 1st tuner which chooses and outputs one f the output signals of two or more transponders of the digital broadcast which the antenna 11 eceived. The transport decoder which 13 chooses one of two or more channels contained in the utput signal of one transponder which a tuner 12 outputs, and is outputted, 14 is an AV decoder hich reproduces and outputs the digital signal of the specific channel which the transport ecoder 13 outputs to the image of an analog, and an audio signal. Moreover, 15 is the image of ie digital signal which the transport decoder 13 outputs, or the analog which the AV decoder 14 utputs, and an output means to output an audio signal outside. 16 is a user input part into which user inputs control signals, such as a channel change. 17 is a system controller which receives ie control signal from the user input part 16, and controls operation of the 1st tuner 12, the ansport decoder 13, the AV decoder 14, and the output means 15.

0028] Set Top Box (STB) 10 is constituted by the 1st tuner 12, transport decoder 13, AV

lecoder 14, output means 15, and system controller. 20 is the image which the AV decoder 14 outputs, and a monitor which displays an image and a sound in response to an audio signal. The antenna with which 31 receives analog broadcasting, and 32 are the 2nd tuner which chooses and outputs one of two or more channels of the analog broadcasting which the antenna 31 received. 33 is the Records Department which records the image of the digital signal which the transport decoder 13 outputted from the signal which the 2nd tuner 32 outputs, or the output means 15 of STB10 outputs, or the analog which the AV decoder 14 outputs, and an audio signal. 34 is a user input part into which a user inputs control signals, such as a recording start and a recording stop. 35 receives the control signal from the user input part 34, and is the 2nd tuner 32 and a system controller which controls operation of the Records Department 33.

[0029] Next, operation is explained. A tuner 12 chooses and outputs one of the output signals of two or more transponders which the antenna 11 received. The program of 4–6 channels is usually included in the output signal of the transponder, and the transport decoder 13 chooses and extracts one of two or more channels contained in the output signal of the transponder received from the tuner 12, and outputs this to the AV decoder 14. The AV decoder 14 reproduces the signal from the transport decoder 13 to an image and a sound, and outputs it to monitor 20 grade. When recording the program of digital broadcast, the signal which the transport decoder 13 outputs, or the signal outputted from the AV decoder 14 is outputted to recording equipment 30 by the output means 15, and recording equipment 30 records the received signal on the Records Department 33. The Records Department 33 performs digital record, when recording the signal which the transport decoder 13 outputs, and when recording the signal outputted from the AV decoder 14, it performs analog record.

[0030] A channel with the transport decoder 13 is chosen and outputted here. While recording equipment 30 is recording the digital program outputted from the output means 15 of STB If this user input is performed when the control input of display channel selection is inputted from the user input part 16 and this inputted selection channel differs from the channel which the transport decoder 13 is choosing and outputting now The channel which the transport decoder 13 chooses and outputs changes, and in order for the program outputted from the output means 15 to also change, it will become impossible for recording equipment 30 to be able to continue recording the program recorded now.

[0031] [the digital broadcast record system by the form 1 of this operation] If the system controller 17 by the side of STB receives the control input of the display channel selection from the user input part 16 It is judged whether it is necessary to change the channel which the transport decoder 13 is choosing and outputting now. It is the channel as the channel which the transport decoder 13 is choosing and outputting now with same channel chosen by the user input. When the transport decoder 13 does not need to change the channel chosen and outputted now, the control input is received, and the monitor display of the selected channel is carried out. On the other hand, the channels chosen by the user input are the channel which the transport decoder 13 is choosing and outputting now, and a different channel. When the transport decoder 13 needs to change the channel chosen and outputted now While recording equipment 30 detects whether the signal currently outputted from the present output means 15 is under recording and is recorded, the system controller 17 takes out an indication signal so that warning may be displayed to the alarm display means 40. The alarm display means 40 receives this indication signal. "a digital program is under recording now. If display channel selection is performed, it becomes impossible to record the program under present recording. The message of warning, such as ", is displayed with a monitor display top, a sound, etc. The user can recognize that the digital program of the channel which differs from the channel which recording equipment 30 chose by a user input by this warning is under recording. It can be chosen whether whether selection of display channel being stopped and a current line carry out the monitor display of the channel which canceled and chose the recording of the digital program which is. That is, before a user

nows, the signal outputted to recording equipment 30 changes, and it can avoid un-arranging that the program of a different channel from the channel which asks for recording will be ecorded]..

0032] thus, [the digital broadcast record system by the form 1 of this operation] Digital roadcast is received. The signal of one transponder is chosen from the received digital roadcast signal. The signal of one channel is chosen from the signal of the one above-mentioned ransponder which the tuner 12 to output and this tuner 12 output. The signal of the channel vhich the transport decoder 13 to output and this transport decoder 13 output is decoded. STB10 which has an output means 15 to output the analog signal which the digital signal or the bove-mentioned AV decoder 14 which the AV decoder 14 changed into an analog signal and the bove-mentioned transport decoder 13 output outputs. In the digital broadcast record system vhich consists of recording equipment 30 which has the Records Department 33 which records his output signal of STB10 When the control signal which should change the channel chosen by he above-mentioned transport decoder 13 to another channel from the channel chosen now is eceived A detection means to detect whether the above-mentioned recording equipment 30 is ecording the signal of the channel chosen now (system controller 17), Since it had composition quipped with an alarm display means 40 to display this when this detection means detected vhat the above-mentioned recording equipment is recording Before a user knows, the signal utputted to recording equipment 30 changes. and it can avoid un-arranging [that the program of different channel from the channel which asks for recording will be recorded].

0033] In addition, although the form 1 of the above-mentioned implementation showed the thing f composition of that the transport decoder 13 of STB chooses and outputs the signal of one hannel from the signal of the one above-mentioned transponder which a tuner 12 outputs If the ransport decoder 13b is the thing of composition of outputting from a port which chooses the ignal of two or more channels from the signal of one transponder, and is different, respectively s shown in drawing 2 Since two different channels can be simultaneously outputted if the ransponder is the same even if channels differ, even if it chooses the channel under record, and different channel as a display channel, a selection channel can be displayed without interfering vith recording. When [however,] the channel of the channel under recording chosen as a display hannel is a channel from which a transponder differs even in this case Since a transponder will e changed in a tuner, the transport decoder 13b cannot output the channel under record after hannel selection now. When [therefore,] the transport decoder of STB is the thing of omposition of outputting from a port which chooses the signal of two or more channels from the ignal of one transponder, and is different, respectively When the control signal which should hange the transponder chosen by the tuner to another transponder from the transponder hosen now is received The system controller of STB detects whether the above-mentioned ecording equipment is recording the signal of one channel of the transponders chosen now. Vhen it detects that it is under record, the composition, then the good and same effect as a form of the above-mentioned implementation which display this by an alarm display means are done o.

0034] Form 2. drawing 3 of operation is the figure showing the composition of the digital roadcast record system by the form 2 of operation of this invention, and the same mark as rawing 1 is the same or a considerable portion in a figure. Moreover, 18 receives the program ecording reservation and program display reservation which are inputted from the user input part 6, and holds this. The 1st timer which will output the control signal for reservation execution to he system controller 17 if reservation time comes, 36 is the 2nd timer which outputs the control ignal for reservation execution to the system controller 35, when the program recording eservation inputted from the user input part 34 is received, this is held and reservation time omes.

0035] With the form 2 of this operation here [the 1st timer 18 by the side of STB10, and the

!nd timer 36 by the side of recording equipment 30] any — although — [registration of ecording reservation of a digital program can be performed, and / a control signal / exchange ınd] between the system controller 17 of STB10, and the system controller 35 of recording ıquipment 30 It has the composition that the timed recording of a digital program can be made, ıy interlocking both system controllers and making program recording reservation with either the st timer 18 by the side of STB10, and the 2nd timer 36 by the side of recording equipment 30.

0036] Moreover, drawing 4 is the figure showing the program reservation information held at the st timer 18 of the digital broadcast record system by the form 2 of this operation, and the 2nd imer 36, and is set to a figure. Reservation S1 - reservation S3 It is the program recording eservation (digital program recording reservation) which the 1st timer 18 received. Reservation)1 and reservation D2 It is the program display reservation (digital program display reservation) vhich the 1st timer 18 received, and they are reservation R1 and reservation R2. It is the ırogram recording reservation (digital program recording reservation or analog broadcasting ırogram recording reservation) which the 2nd timer 36 received. [the 1st timer 18] only not only ı the information on the program reservation which the 1st timer 18 self received as shown in a igure The information on the program reservation which the 2nd timer 36 received is also held, nd another side and the 2nd timer 36 hold only the information on the program reservation vhich the 2nd timer 36 self received.

0037] Next, operation is explained. In the digital broadcast record system of the form 2 of this ıperation when program recording reservation is made at the 1st timer 18 by the side of STB10 the system controller 17 by the side of STB10] According to the control signal for the eservation execution which the 1st timer 18 outputs, control the 1st tuner 12 and the transport lecoder 13, and the channel of the recording purpose program is chosen. While outputting the ignal which the transport decoder 13 outputs, or the signal outputted from the AV decoder 14 to ecording equipment 30 by the output means 15, a control signal is outputted to the system ontroller 35 by the side of recording equipment 30. and — the system controller 35 by the side f recording equipment 30 operates the Records Department 33 according to the control signal rom the system controller 17 by the side of STB10 — the signal from the output means 15 of TB — digital one — or analog record is carried out. When [moreover,] digital program ecording reservation is made at the 2nd timer 36 by the side of recording equipment 30 The ystem controller 35 by the side of recording equipment 30 embraces the control signal for the eservation execution which the 2nd timer 36 outputs. the Records Department 33 — the signal rom the output means 15 of STB — digital one — or while making it operate so that analog ecord may be carried out A control signal is outputted to the system controller 17 by the side of TB10. The system controller 17 by the side of STB10 controls the 1st tuner 12 and the ransport decoder 13 according to the control signal from the system controller 35 by the side of ecording equipment 30, and chooses the channel of the recording purpose program. The signal vhich the transport decoder 13 outputs, or the signal outputted from the AV decoder 14 is utputted to recording equipment 30 by the output means 15. Usually, [a timer does not have uplication as compared with the contents already reserved by the timer, when reservation is ıputted, when execution of each reservation is possible for it, it has the composition of receiving ıe inputted reservation, but] When two or more timers receive reservation independently, espectively The recording time of the program recording separately reserved in each timer verlaps, and [cannot record as reservation or] It is difficult to avoid effectively that the hannels of the digital program by which recording reservation was made by the timer by the side f the digital program by which display reservation was made by the timer by the side of STB, nd recording equipment differ, and broadcasting hours overlap, and recording or a display cannot e performed as reservation.

0038] In the digital broadcast record system by the form 2 of this operation, as shown in drawing . the 1st timer 18 has the composition of holding not only the reservation information that this

st timer received but the reservation information which the 2nd timer 36 received. When rogram reservation is inputted into the 1st timer 18 from the user input part 16, [the 1st timer 8] Only when it judges whether duplication arises as compared with the reservation information o which self holds the inputted program reservation and which this 1st timer 18 received, and all he reservation information that the 2nd timer 36 received and duplication does not arise, the nputted program reservation is received. [when duplication of reservation produces the case of rogram recording reservation here when the recording time of program recording overlaps, the hannels of the digital program by which recording reservation was made between program ecording reservation and program display reservation with the digital program by which display eservation was made differ and broadcasting hours overlap, produce, but] The 1st timer 18 hecks that this duplication does not arise, and receives program reservation.

0039] When program recording reservation is inputted into the 2nd timer 36 from the user input art 34, on the other hand, [the 2nd timer 36] Retrieve the program reservation information urrently held at the 1st timer 18, and the inputted program reservation is compared with the eservation information which the 1st timer 18 received, and all the reservation information that he 2nd timer 36 received. Only when it judges whether duplication arises and duplication does ot arise, the inputted program reservation is received. As mentioned above, since reservation is eceived only when duplication produces any timer with the form 2 of this operation as compared ith no program reservation information which both timers received The recording time of the rogram recording separately reserved in each timer overlaps, and [cannot record as reservation r] It is effectively avoidable that the channels of the digital program by which recording eservation was made by the timer by the side of the digital program by which display reservation as made by the timer by the side of STB, and recording equipment differ, and broadcasting ours overlap, and recording or a display cannot be performed as reservation.

0040] Moreover, it sends out the contents of the received program recording reservation to the st timer 18 of STB10 while holding the received program recording reservation information itself, hen the 2nd timer 36 is received [program reservation]. The 1st timer 18 holds this for the nformation received from the 2nd timer 36 as one of the program reservation information. By perating as mentioned above, all of the program reservation information which the 1st timer 18 lways received, and the program reservation information which the 2nd timer 36 received will be eld at the 1st timer 18.

0041] thus, [the digital broadcast record system by the form 2 of this operation] Digital roadcast is received. The signal of a predetermined transponder is chosen from the received igital broadcast signal. The signal of a predetermined channel is chosen from the signal of the ransponder which the 1st tuner 12 to output and this 1st tuner 12 output. The signal of the hannel which the transport decoder 13 to output and this transport decoder 13 output is ecoded. An output means 15 to output the analog signal which the digital signal or the above-entioned AV decoder which the AV decoder 14 changed into an analog signal and the above-entioned transport decoder output outputs and program recording reservation of digital roadcast, or program display reservation, Or STB10 which has the 1st timer 18 which performs rogram recording reservation of analog broadcasting. Analog broadcasting is received. A redetermined channel is chosen from the received analog broadcasting signal. [the 2nd timer 36 hich performs the Records Department 33 which records the output signal of the 2nd tuner 32 output and this 2nd tuner 32, or the output signal of the above STB10 and program recording eservation of analog broadcasting, or program recording reservation of digital broadcast] In the igital broadcast record system which consists of recording equipment which it has Since the 1st mer 18 of the above had composition also holding the reservation information reserved in the nd timer 36 of the above The recording time of the program recording separately reserved in ach timer overlaps, and [cannot record as reservation or] It is effectively avoidable that the hannels of the digital program by which recording reservation was made by the timer by the side

f the digital program by which display reservation was made by the timer by the side of STB, nd recording equipment differ, and broadcasting hours overlap, and recording or a display cannot e performed as reservation.

0042] In addition, although the 1st timer 18 by the side of STB had composition also holding the eservation information reserved in the 2nd timer 36 by the side of recording equipment with the orm 2 of the above-mentioned implementation As shown in drawing 5 , conversely, the 2nd timer 6 by the side of recording equipment is good also as composition also holding the reservation ıformation reserved in the 1st timer 18 by the side of STB, and does so the same effect as the orm 2 of the above-mentioned implementation. In the digital broadcast record system considered s such composition When program reservation is inputted into the 2nd timer 36 from the user ıput part 34, [the 2nd timer 36] Only when it judges whether duplication arises as compared ith the reservation information to which self holds the inputted program reservation and which his 2nd timer 36 received, and all the reservation information that the 1st timer 18 received and uplication does not arise, the inputted program reservation is received. When program recording eservation is inputted into the 1st timer 18 from the user input part 16, on the other hand, [the st timer 18] Retrieve the program reservation information currently held at the 2nd timer 36, nd the inputted program reservation is compared with the reservation information which the 2nd imer 36 received, and all the reservation information that the 1st timer 18 received. Only when it udges whether duplication arises and duplication does not arise, the inputted program eservation is received.

0043] Thus, since reservation is received only when duplication produces any timer as compared ith no program reservation information which both timers received The recording time of the rogram recording separately reserved in each timer overlaps, and [cannot record as reservation r] It is effectively avoidable that the channels of the digital program by which recording eservation was made by the timer by the side of the digital program by which display reservation as made by the timer by the side of STB, and recording equipment differ, and broadcasting ours overlap, and recording or a display cannot be performed as reservation. Moreover, it sends ut the contents of the received program recording reservation to the 2nd timer 36 of recording quipment 30 while holding the received program recording reservation information itself, when he 1st timer 18 is received [program reservation]. The 2nd timer 36 holds this for the ıformation received from the 1st timer 18 as one of the program reservation information. By perating as mentioned above, all of the program reservation information which the 2nd timer 36 lways received, and the program reservation information which the 1st timer 18 received will be eld at the 2nd timer 36.

0044] Moreover, as shown in drawing 6 , it is good also as composition also holding the eservation information by which the timer of both the 1st timer and the 2nd timer was reserved ı the timer of another side. In the digital broadcast record system considered as such omposition When program reservation is inputted into the 1st timer 18 from the user input part 6, [the 1st timer 18] Only when it judges whether duplication arises as compared with the eservation information to which self holds the inputted program reservation and which this 1st imer 18 received, and all the reservation information that the 2nd timer 36 received and uplication does not arise, the inputted program reservation is received. When program eservation is inputted into the 2nd timer 36 from the user input part 34, on the other hand, [the nd timer 36] Only when it judges whether duplication arises as compared with the reservation ıformation to which self holds the inputted program reservation and which this 2nd timer 36 eceived, and all the reservation information that the 1st timer 18 received and duplication does ot arise, the inputted program reservation is received.

0045] Thus, since reservation is received only when duplication produces any timer as compared ith no program reservation information which both timers received The recording time of the rogram recording separately reserved in each timer overlaps, and [cannot record as reservation

or,] It is effectively avoidable that the channels of the digital program by which recording eservation was made by the timer by the side of the digital program by which display reservation vas made by the timer by the side of STB, and recording equipment differ, and broadcasting iours overlap, and recording or a display cannot be performed as reservation. Moreover, it sends ut the contents of the received program recording reservation to the 2nd timer 36 of recording equipment 30 while holding the received program recording reservation information itself, when he 1st timer 18 is received [program reservation]. The 2nd timer 36 holds this for the nformation received from the 1st timer 18 as one of the program reservation information. On the ther hand, it sends out the contents of the received program recording reservation to the 1st imer 18 of STB10 while holding the received program recording reservation information itself, vhen the 2nd timer 36 is received [program reservation]. The 1st timer 18 holds this for the nformation received from the 2nd timer 36 as one of the program reservation information. All of he program reservation information which the 1st timer 18 always received to the 1st timer 18 y operating as mentioned above, and the program reservation information which the 2nd timer 36 received are held. Moreover, all of the program reservation information which the 2nd timer 36 lways received, and the program reservation information which the 1st timer 18 received will be eld at the 2nd timer 36.

0046] Moreover, although explained in the form 2 of the above-mentioned implementation as vhat exchanges the program reservation information between the 1st timer 18 and the 2nd timer 36 directly between the 1st timer 18 and the 2nd timer 36 It cannot be overemphasized that it is ood also as composition which performs the exchange of program reservation information hrough the system controllers 17 and 35.

0047] Form 3. of operation, next the digital broadcast record system by the form 3 of operation f this invention are explained.

0048] Although the composition of the digital broadcast record system by the form 3 of this peration is fundamentally [as the composition of the digital broadcast record system by the orm 2 of operation shown in drawing 3] the same, the 1st timer 18 and the 2nd timer hold only he reservation information which self received, respectively. Moreover, the 1st timer 18 ompares the reservation execution time of the program recording reservation concerned with he reservation execution time of the program recording reservation already performed by the nd timer of the above, when there is an input of program recording reservation. When it detects /hether duplication of program recording time arises and duplication arises, the duplicating ontents are displayed by the display means which is not illustrated. Display means may be isplay means, such as a liquid crystal prepared separately [a monitor besides a means to display a character etc. on a monitor 20].

0049] Next, operation is explained. Drawing 7 is a figure for explaining operation of the digital roadcast record system by the form 3 of this operation. The digital program display reservation y which P1 was already received in the figure at the 1st timer 18, The digital program recording eservation by which P2 was already received at the 1st timer 18, The analog broadcasting rogram recording reservation already received by the 1st timer 18 P3, the analog broadcasting rogram recording reservation already received by the 2nd timer 36 P4, and P5 are the digital rogram recording reservation already received by the 2nd timer 36.

0050] In the digital broadcast record system by the form 3 of this operation, if reservation of the ecording of a program is newly inputted into the 1st timer 18 by the side of STB, it will be etected whether the 1st timer 18 retrieves the program reservation information currently held t the 2nd timer 36, and duplication of program recording time produces it. [here / the recording eservation held at the 2nd timer 36] Since the Records Department 33 will be in a record state y the reservation execution and it will be in the state where other programs are unrecordable, ven if this is recording reservation of a digital program, and it is recording reservation of an nalog broadcasting program [the 1st timer 18 / the recording reservation held at the 2nd timer

:6] irrespective of whether it is digital program recording reservation or it is analog broadcasting rogram recording reservation It checks whether the reservation execution time and the eservation execution time of new recording reservation have duplication, or there is nothing, and hen there is duplication, the contents of the duplication are displayed on a display means.

0051] The case where it is newly going to reserve the recording of a program in the time zone of 24 shown in drawing 7 "the inputted program recording overlaps the recording time of the already eserved analog broadcasting program (program name). Please choose whether reservation which] is validated. Messages, such as ", are displayed. When it is going to reserve the ecording of the same analog broadcasting program as the analog broadcasting program by which ecording reservation is newly made by P4 in the time zone of P4 shown in drawing 7 , a message — "recording reservation of the inputted program recording is already made" — is displayed. noreover — the case where it is newly going to reserve the recording of a program in the time one of P5 shown in drawing 7 — "— the inputted program recording overlaps the recording time f the already reserved digital program (program name). Please choose whether reservation which] is validated. Messages, such as ", are displayed. When it is going to reserve the ecording of the same digital program as the digital program by which recording reservation is ewly made by P5 in the time zone of P5 shown in drawing 7 , a message — "recording eservation of the inputted program recording is already made" — is displayed. By these nessages, the user can check the situation of reservation and can avoid duplication reservation ffectively.

0052] thus, [the digital broadcast record system by the form 3 of this operation] Digital roadcast is received. The signal of a predetermined transponder is chosen from the received ligital broadcast signal. The signal of a predetermined channel is chosen from the signal of the ransponder which the 1st tuner to output and this 1st tuner output. The signal of the channel hich the transport decoder to output and this transport decoder output is decoded. [an output neans to output the analog signal which the digital signal or the above-mentioned AV decoder hich AV decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation, or program recording reservation of analog broadcasting] STB which has the 1st imer to perform, and analog broadcasting are received. A predetermined channel is chosen from he received analog broadcasting signal. The output signal of the 2nd tuner to output and the 2nd uner of the above When [or] the 1st timer of the above has the input of program recording eservation in the digital broadcast record system which consists of recording equipment which as the 2nd timer which performs the Records Department which records the output signal of bove STB and program recording reservation of analog broadcasting, or program recording eservation of digital broadcast The reservation execution time of the program recording eservation concerned is compared with the reservation execution time of the program recording eservation already performed by the 2nd timer of the above. Since it had composition equipped ith a detection means to detect whether duplication of program recording time arises, a user an realize the digital broadcast record system which can avoid duplication reservation of rogram recording effectively.

0053] When [in addition,] the 1st timer by the side of STB has the input of program recording eservation with the form 3 of the above-mentioned implementation Although it considered as he composition to detect whether the 1st timer would compare the reservation execution time f the program recording reservation concerned with the reservation execution time of the rogram recording reservation already performed by the 2nd timer of the above, and duplication f program recording time would arise When the 2nd timer has the input of program recording eservation, the reservation execution time of the program recording reservation already erformed by the reservation execution time, the 1st timer of the above, or the 2nd timer of the rogram recording reservation concerned and program display reservation is compared. It is good

lso as composition which detects whether duplication of reservation execution time arises.
0054] In the digital broadcast record system considered as such composition, if reservation of
ne recording of a program is newly inputted into the 2nd timer 36 by the side of recording
quipment, it will be detected whether the 2nd timer 36 retrieves the program reservation
nformation currently held at the 1st timer 18, and duplication of program recording time produces
. [here / the recording reservation held at the 1st timer 18] Even if this is recording
eservation of a digital program and it is recording reservation of an analog broadcasting program
: is what the Records Department 33 will be in a record state by the reservation execution, and
ill be in the state where other programs are unrecordable. Moreover, if the channels of the
isplay purpose program of this display reservation and the recording purpose program of new
ecording reservation differ or transponders differ, when there is digital program display
eservation Since the program signal for recording of STB cannot be outputted and record
eservation cannot be fulfilled, [the 2nd timer 36] [the recording reservation held at the 1st
imer 18] irrespective of whether it is digital program recording reservation or it is analog
roadcasting program recording reservation It is checked whether the reservation execution time
nd the reservation execution time of new recording reservation have duplication, or there is
othing. Moreover, it checks whether the channels of the display purpose program of the display
eservation held at the 1st timer 18 and the recording purpose program of new recording
eservation etc. differ, and reservation execution time has duplication, or there is nothing, and
hen there is duplication, the contents of the duplication are displayed on a display means. for
xample, when it is going to reserve the recording of the digital program from which the digital
rogram by which display reservation is newly made by P1, a channel, etc. differ in the time zone
f P1 shown in drawing 7 R> 7 "The inputted program recording overlaps the display time of the
lready reserved digital program (program name). Please choose whether reservation [which] is
alidated. The case where it is newly going to reserve the recording of a program in the time
one of P2 which displays messages, such as ", and is shown in drawing 7 "the inputted program
ecording overlaps the recording time of the already reserved digital program (program name).
lease choose whether reservation [which] is validated. Messages, such as ", are displayed.
hen it is going to reserve the recording of the same digital program as the digital program by
hich recording reservation is newly made by P2 in the time zone of P2 shown in drawing 7 , a
essage — "recording reservation of the inputted program recording is already made" — is
isplayed. moreover — the case where it is newly going to reserve the recording of a program in
ne time zone of P3 shown in drawing 7 — "— the inputted program recording overlaps the
ecording time of the already reserved analog broadcasting program (program name). Please
hoose whether reservation [which] is validated. Messages, such as ", are displayed. When it is
oing to reserve the recording of the same digital program as the analog broadcasting program by
hich recording reservation is newly made by P3 in the time zone of P3 shown in drawing 7 , a
essage — "recording reservation of the inputted program recording is already made" — is
isplayed. By these messages, the user can check the situation of reservation and can avoid
uplication reservation effectively.
0055] Form 4. drawing 8 of operation is the figure showing the composition of the digital
roadcast record system by the form 4 of operation of this invention, and the same mark as
rawing 1 is the same or a considerable portion in a figure. Moreover, 18b is a timer which
utputs the control signal for reservation execution to the system controller 17, when the
rogram recording reservation and program display reservation which are inputted from the user
put part 16 are received, this is held and reservation time comes.
0056] Next, operation is explained. When displaying or recording the digital program which STB
utputs by timer reservation, a user performs display reservation of the program for which it asks
om the user input part 16 to Timer 18b, or recording reservation. Timer 18b holds this
servation information, and if the start time of a reservation program comes, it will output the

ontrol signal for reservation execution. The system controller 17 of STB embraces the control ignal for the reservation execution which Timer 18b outputs. Control the 1st tuner 12 and the ransport decoder 13, choose the channel of the recording purpose program, output the signal of program to a monitor 20 through the AV decoder 14, and perform a program display, or or for he recording of a program The signal which the transport decoder 13 outputs, or the signal utputted from the AV decoder 14 is outputted to recording equipment 30 by the output means 5.

0057] The program of a channel with the transport decoder 13 is chosen and outputted here. his program signal is outputted to a monitor 20 through the AV decoder 14. If display about the rogram in which a channel differs from the program which is an output program of STB and is lisplayed now, or reservation of recording is fulfilled while the program display is performed When he channel which the transport decoder 13 chooses and outputs changes, and the program urrently displayed changes or the program of a conversely different channel displays, un-rranging [that timer reservation becomes impracticable] arises. Moreover, a channel with the ransport decoder 13 is chosen and outputted. While recording equipment 30 is recording the ligital program outputted from the output means 15 of STB If display about the program in which channel differs from the program which is an output program of STB and is recorded now, or eservation of recording is fulfilled In order for the program which the channel which the ransport decoder 13 chooses and outputs changes, and is outputted from the output means 15 o also change, When recording equipment 30 is during the recording of the program of a channel /hich it becomes impossible to be able to continue recording the program recorded now, and is onversely different, un-arranging [that timer reservation becomes impracticable] arises.

0058] [the digital broadcast record system by the form 4 of this operation] As the system ontroller 17 of STB is shown in the flow chart of drawing 10 When it detects that retrieve the eservation information on Timer 18b periodically (Step S1), and reservation of the output rogram of STB is made with Timer 18b, It is detected whether they are (Step S2) and the state /here STB can output the signal of the reservation purpose program just before execution of the eservation concerned (Step S3). When STB detects that the reservation purpose program is in he state which is outputting the signal of a digital program which is [channel] different in the tate, i.e., now, where STB cannot output the signal of the reservation purpose program, an ndication signal is taken out so that warning may be displayed to the alarm display means 40. he alarm display means 40 receives this indication signal. "although display (or recording) eservation of a digital program is due to be fulfilled soon ** [execution of reservation / ecome / impossible / it / for a program (or under recording) present on display to display] (or ecording) The message of warning, such as ", is displayed with a monitor display top, a sound, tc. (Step S4). It can be chosen whether by this warning, the user can recognize that reservation f the digital program held at Timer 18b is fulfilled soon, cancels reservation of an execution chedule, and the program under the present display or recording is continued, and he displays or ecords, or reservation is kept performed. That is, it is avoidable un-arranging [that the program f the intention of a program no longer being suddenly displayed while on display, or recording is o longer recorded, and timer reservation becomes impracticable against a user's will against a ser's will].

0059] thus, [the digital broadcast record system by the form 4 of this operation] Digital roadcast is received. The signal of one transponder is chosen from the received digital roadcast signal. The signal of one channel is chosen from the signal of the one above-mentioned ransponder which the tuner 12 to output and this tuner 12 output. The signal of the channel /hich the transport decoder 13 to output and this transport decoder 13 output is decoded. TB10 which has an output means 15 to output the analog signal which the digital signal or the bove-mentioned AV decoder 14 which the AV decoder 14 changed into an analog signal and the bove-mentioned transport decoder 13 output outputs, In the digital broadcast record system

/hich consists of recording equipment 30 which has the Records Department 33 which records his output signal of STB10 The timer 18b which reserves the digital program which the above ;TB10 outputs, A detection means to detect whether it is in a state with the above STB10 able o output the signal of the reservation purpose program just before execution of the reservation :oncerned when reservation of the output program of the above STB10 is made with the above-ıentioned timer 18b (system controller 17), Since this detection means had composition ıquipped with an alarm display means 40 to display this when it detected that it is in a state with \bove STB unable to output the signal of the reservation purpose program It is avoidable un-.rranging [that the program of the intention of a program no longer being suddenly displayed /hile on display, or recording is no longer recorded, and timer reservation becomes impracticable :gainst a user's will against a user's will].

0060] [in addition, the timer 18b which reserves the digital program which STB10 outputs with he form 4 of the above-mentioned implementation] When it detects that it is prepared in the ;TB10 side, the system controller 17 by the side of STB retrieves the reservation information on Timer 18b periodically, and reservation of the output program of STB is made with Timer 18b, Vhen it detects that it is in the state where it cannot be detected whether it is the state where ;TB can output the signal of the reservation purpose program, and STB cannot output the signal f the reservation purpose program just before execution of the reservation concerned [had :omposition which takes out an indication signal so that warning might be displayed to the alarm lisplay means 40, but] [the timer 36b which reserves the digital program which STB10 outputs] ıs shown in drawing 9 When it detects that it is prepared in the recording equipment 30 side, the ystem controller 35 by the side of recording equipment retrieves the reservation information on Timer 36b periodically, and reservation of the output program of STB is made with Timer 36b, Vhen it detects that it is in the state where it cannot be detected whether it is the state where ;TB can output the signal of the reservation purpose program, and STB cannot output the signal f the reservation purpose program just before execution of the reservation concerned It is good lso as composition which takes out an indication signal so that warning may be displayed to the larm display means 40, and the same effect as the form 4 of the above-mentioned nplementation is done so.

0061] Form 5. drawing 11 of operation is the figure showing the composition of the digital roadcast record system by the form 5 of operation of this invention, and the same mark as lrawing 3 is the same or a considerable portion in a figure. Moreover, 19 is an EPG information torage part by which separation extraction was carried out by the transport decoder 13 and /hich memorizes EPG information.

0062] In digital television broadcasting, information (program-guide information) required in order o create a program guide to the main information on a program, including an image, a sound, etc., s multiplexed and broadcast. A program guide is created based on this program-guide information y the receiving set side, this is displayed on a screen, and EPG (Electronic Program Guide) to /hich a televiewer performs selection of a program and reservation on a screen is put in practical se. Although EPG information is this program-guide information, for example, there is Europe)VB (Digital Video Broadcasting) as one of the standards of a transmission signal in the digital roadcast using MPEG2 By this DVB standard, SI (Service Information) is transmitted as ıformation (EPG information) which is a help at the time of a televiewer choosing and reserving a rogram. This is information sent out for every definite period of time to every service ɔroadcasting station), and the information for identifying a program, the title of a program, the roadcast start time of a program, the broadcasting-hours length of a program, the channel it is roadcast that a program is, a genre code, etc. are contained.

0063] Next, operation of the digital broadcast record system by the form 5 of this operation is xplained. In the digital broadcast record system of the form 5 of this operation, when making the imed recording of a digital program, recording of a digital program is reserved from the user input

art 16 to the 1st timer 18 by the side of STB, or the 2nd timer 36 by the side of [the user input art 34 to] recording equipment. If the broadcast time of the recording purpose program comes, ne control signal for reservation execution will be outputted, the system controller by the side of TB and recording equipment will control operation of each part according to this control signal, nd, as for the timer which received reservation, the recording purpose program will be recorded. /hen the broadcast start time of the recording purpose program is changed here by having xtended the broadcasting hours of the program in front of the recording purpose program etc. fter the timer received reservation, If recording operation was performed based on reservation nformation when a timer receives reservation, the recording purpose program cannot be ecorded certainly. [such change of the broadcasting hours of a program or change of a roadcast channel] In STB equipped with the timer which is STB corresponding to an EPG ystem and performs program display reservation and program record reservation since it is sent ut at any time from the informer of a program as EPG information EPG information is checked in dvance of execution of reservation, and if the program reservation information which a timer olds is changed when there is change to program broadcasting hours or a program broadcast hannel, the program reserved to the timer of STB will be displayed and recorded certainly.

)064] On the other hand, it is the digital broadcast record system which consists of STB and ecording equipment. In what recording equipment equips with the timer of recording reservation f a digital program which can be set up independently with the timer by the side of STB If the rogram reservation information which the timer by the side of recording equipment holds is not hanged, the case where the recording purpose program is not certainly recorded even if program ecording reservation received by the timer by the side of recording equipment is fulfilled arises. the digital broadcast record system by the form 5 of this operation] As the system controller 5 of recording equipment is shown in the flow chart of drawing 13 R> 3 When it detects that etrieve the reservation information on the 2nd timer 36 periodically (Step S1), and recording eservation of the output program of STB is made with the 2nd timer 36, (Step S2) and the EPG nformation storage part 19 of STB are searched just before execution of the reservation oncerned. When it is detected that check whether a reservation program is broadcast as lanned (Step S3), for example, the broadcast time of a reservation program is changed, it ewrites at the broadcast time after changing the broadcast time of the program reservation nformation on the 2nd timer 36 (Step S4). Also when the broadcast time of the recording urpose program concerned etc. is changed after making by this recording reservation of the igital program which STB outputs to the 2nd timer 36, based on the control signal for the eservation execution which the 2nd timer 36 outputs, the recording purpose program can be ecorded certainly.

)065] thus, [the digital broadcast record system by the form 5 of this operation] The signal of predetermined channel is chosen and outputted from the signal of the transponder which the st tuner 12 which receives digital broadcast, and chooses and outputs the signal of a redetermined transponder from the received digital broadcast signal, and this 1st tuner 12 utput. Moreover, the information (EPG information) about the broadcasting hours of a program nd a broadcast channel is extracted from the signal of a transponder. The signal of the channel hich the transport decoder 13 to output and this transport decoder 13 output is decoded. An utput means 15 to output the analog signal which the digital signal or the above-mentioned AV ecoder 14 which the AV decoder 14 changed into an analog signal and the above-mentioned ransport decoder 13 output outputs, and program recording reservation of digital broadcast Or TB10 which has the 1st timer which performs program display reservation or program recording eservation of analog broadcasting, and analog broadcasting are received. A predetermined hannel is chosen from the received analog broadcasting signal. [the 2nd timer 36 which erforms the Records Department 33 which records the output signal of the 2nd tuner 32 to utput and the 2nd tuner 32 of the above, or the output signal of the above STB10 and program

ecording reservation of analog broadcasting, or program recording reservation of digital roadcast] In the digital broadcast record system which consists of recording equipment which it as when program recording reservation of digital broadcast is performed to the 2nd timer 36 of he above The check of whether there is no broadcast time of the recording purpose program ust before the recording start by the program recording reservation concerned, and there is any hange in a broadcast channel is performed to Above STB. Since it had composition equipped ith a means (system controller 35) to change the information on the program recording eservation concerned of the 2nd timer 36 of the above when there was change, based on the ontrol signal for the reservation execution which the 2nd timer 36 outputs, the recording urpose program can be recorded certainly.

0066] In addition, although the system controller 35 of recording equipment was considered as he composition which searches the EPG information storage part 19 prepared in STB, and hecks the existence of change, such as broadcast time of a program, with the form 5 of the bove-mentioned implementation The EPG information storage part 37 which receives the EPG nformation in which the transport decoder 13 of STB carries out separation extraction, and hich it outputs to the recording equipment side from the output signal of a transponder like the nodification shown in drawing 12 , and memorizes this is formed The system controller 35 of ecording equipment is good also as composition which searches this EPG information storage art 37, and checks the existence of change, such as broadcast time of a program. In such a nodification, [the system controller 35 of recording equipment] When it detects that retrieve he reservation information on the 2nd timer 36 periodically (Step S1), and recording reservation f the output program of STB is made with the 2nd timer 36 as shown in the flow chart of rawing 13 , Acquire EPG information in (Step S2) and the EPG information storage part 37 from he transport decoder 13 of STB, and they are made to memorize this just before execution of he reservation concerned (Step S3). When it is detected that search this EPG information torage part 37, and check whether a reservation program is broadcast as planned (Step S4), for xample, the broadcast time of a reservation program is changed, it rewrites at the broadcast ime after changing the broadcast time of the program reservation information on the 2nd timer 6 (Step S4). Like the digital broadcast record system of the form 5 of the above-mentioned nplementation by this Also when the broadcast time of the recording purpose program oncerned etc. is changed after making recording reservation of the digital program which STB utputs to the 2nd timer 36, based on the control signal for the reservation execution which the nd timer 36 outputs, the recording purpose program can be recorded certainly.

0067] In addition, although the EPG information storage part 37 should acquire EPG information rom the transport decoder 13 of STB and shall have memorized this in the flow chart of drawing 4 just before execution of reservation It cannot be overemphasized that the EPG information torage part 37 acquires EPG information from the transport decoder 13 of STB, and you may nake it always memorize this irrespective of [that reservation of the output program of STB is nade with the 2nd timer 36] whether to buy and there to be.

0068] Form 6. of operation, next the digital broadcast record system by the form 6 of operation f this invention are explained. [the digital broadcast record system by the form 6 of this peration] When the broadcasting hours of the digital program which STB under present ecording outputs in recording equipment extend, It is detected whether the time to the end of a rogram of the program concerned overlaps the broadcasting hours of the program by which rogram recording reservation is made at the 2nd timer by the side of the program by which rogram recording reservation or program display reservation is made at the 1st timer by the side f STB, or recording equipment. [when overlapping, realize with the same composition as the igital broadcast record system of the form 5 of operation which performs the recording or a isplay of a program according to a predetermined priority, and is shown in drawing 11 , or the igital broadcast record system of the modification of the form 5 of operation shown in drawing

2 , but] Operation of the system controller 35 of recording equipment differs.
0069] [the digital broadcast record system by the form 6 of this operation] As the system ontroller 35 of recording equipment is shown in the flow chart of drawing 15 When it detects hat retrieve EPG information periodically, supervise whether the broadcasting hours of the rogram under present record are extended (Step S1), and the broadcasting hours of the program nder present record are extended during recording of the digital program which STB outputs Vhen it detects that investigate whether display reservation of a program or recording eservation is performed to the 1st timer by the side of STB, or the 2nd timer by the side of ecording equipment (Step S2), and reservation of a program is made with one of timers It is ıvestigated whether the broadcasting hours of the program by which the broadcasting hours fter extension of the program under present record are reserved are overlapped (Step S3). Vhen overlapping is detected, the priority is judged based on the standard beforehand set up in he program reserved as the program under present record (Step S4). When it judges that the riority of the program under present record is high, it continues the recording of the program nder record now (Step S5). When it judges that the priority of the program reserved is high, the ecording of the program under record is stopped now, and a reservation program is recorded ased on timer reservation (Step S6). (or display) When there is extension of the broadcasting ours of the digital program under record and the broadcasting hours of a program and luplication by which timer reservation was made arise by this, automatic more desirable program ecording or a program display can be performed. Although the fee collection information on a rogram of the priority of a program, i.e., the audience fee of a program, is cheap, a priority is ıade high here. The standard of making a priority low although the audience fee of a program is ıigh, and a user's viewing-and-listening tendency, Namely, the priority of the program of the enre which the user is often seeing usually is made high, and the standard of making low the riority of the program of the genre seldom seen etc. should just set up a suitable standard the urpose and if needed.
0070] thus, [the digital broadcast record system by the form 6 of this operation] Digital roadcast is received. The signal of a predetermined transponder is chosen from the received igital broadcast signal. The signal of a predetermined channel is chosen from the signal of the ransponder which the 1st tuner to output and this 1st tuner output. The signal of the channel /hich the transport decoder to output and this transport decoder output is decoded. [an output ıeans to output the analog signal which the digital signal or the above-mentioned AV decoder /hich AV decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation, or program recording reservation of analog broadcasting] STB which has the 1st imer to perform, and analog broadcasting are received. A predetermined channel is chosen from he received analog broadcasting signal. In the digital broadcast record system which consists of ecording equipment which has the 2nd timer which performs the Records Department which ecords the output signal of the 2nd tuner to output and the 2nd tuner of the above, or the utput signal of Above STB and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast When the broadcasting hours of the digital program /hich the above STB under present recording outputs in said recording equipment extend, It is etected whether the time to the end of a program of the program concerned overlaps the roadcasting hours of the program by which program recording reservation or program display eservation is made at the 1st or 2nd timer of the above. Since it had composition equipped with control means (system controller 35) to perform the recording or a display of a program ccording to a predetermined priority when overlapping When there is extension of the roadcasting hours of the digital program under record and the broadcasting hours of a program nd duplication by which timer reservation was made arise, automatic more desirable program ecording or a program display can be performed.

)071] In addition, with the form 6 of the above-mentioned implementation [the system ontroller 35 by the side of recording equipment] Although what performs detection of extension f the broadcasting hours of the digital program under recording, detection of the duplication of ıe broadcasting hours of a program by which timer reservation was made with the broadcasting ours after extension, and control that follows a predetermined priority, and records or displays a rogram was shown It is good also as composition to which the system controller 17 by the side f STB carries out these detection and control, and the same effect as the form 6 of the above-ıentioned implementation is done so.

)072]

Effect of the Invention] As mentioned above, [according to the digital broadcast record system oncerning this invention (Claim 1)] Digital broadcast is received. The signal of one transponder ; chosen from the received digital broadcast signal. The signal of one channel is chosen from the ignal of the one above-mentioned transponder which the tuner to output and this tuner output. he signal of the channel which the transport decoder to output and this transport decoder utput is decoded. The receiving terminal equipment which has an output means to output the nalog signal which the digital signal or the above-mentioned decoder which the decoder changed ıto an analog signal and the above-mentioned transport decoder output outputs. In the digital roadcast record system which consists of recording equipment which has the Records epartment which records the output signal of this receiving terminal equipment When the ontrol signal which should change the channel chosen by the above-mentioned transport ecoder to another channel from the channel chosen now is received Since it had composition quipped with a detection means to detect whether the above-mentioned recording equipment is ecording the signal of the channel chosen now, and an alarm display means to display this when ıis detection means detects what the above-mentioned recording equipment is recording Before user knows, the signal outputted to recording equipment changes from receiving terminal quipment, and it is effective in it being avoidable un-arranging [that a different program from ıe program which asks for recording will be recorded].

)073] Moreover, [according to the digital broadcast record system concerning this invention Claim 2)] Digital broadcast is received. The signal of one transponder is chosen from the eceived digital broadcast signal. The signal of two or more channels is chosen from the signal of ıe one above-mentioned transponder which the tuner to output and this tuner output. The ignal of the channel which the transport decoder outputted from a port different, respectively nd this transport decoder output is decoded. The receiving terminal equipment which has an utput means to output the analog signal which the digital signal or the above-mentioned decoder hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs. In the digital broadcast record system which consists of recording equipment hich has the Records Department which records the output signal of this receiving terminal quipment When the control signal which should change the transponder chosen by the above-ıentioned tuner to another transponder from the transponder chosen now is received A etection means to detect whether the above-mentioned recording equipment is recording the gnal of one channel of the transponders chosen now, Since it had composition equipped with an arm display means to display this when this detection means detected what the above-ıentioned recording equipment is recording Before a user knows, the signal outputted to ecording equipment changes from receiving terminal equipment, and it is effective in it being oidable un-arranging [that a different program from the program which asks for recording will e recorded].

)074] Moreover, [according to the digital broadcast record system concerning this invention Claim 3)] Digital broadcast is received. The signal of a predetermined transponder is chosen om the received digital broadcast signal. The signal of a predetermined channel is chosen from ıe signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal

f,the channel which the transport decoder to output and this transport decoder output is lecoded. [an output means to output the analog signal which the digital signal or the above-ıentioned decoder which the decoder changed into an analog signal and the above-mentioned ransport decoder output outputs and program recording reservation of digital broadcast, program lisplay reservation, or program recording reservation of analog broadcasting] The receiving erminal equipment which has the 1st timer to perform, and analog broadcasting are received. A ıredetermined channel is chosen from the received analog broadcasting signal. The output signal ıf the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs he Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. The 1st timer of the above and the 2nd timer at least one of timers] Since it had composition also holding the reservation information reserved in the imer of another side The recording time of the program recording separately reserved in each imer overlaps, and [cannot record as reservation or] There is an effectively avoidable effect ıbout that the channels of the digital program by which recording reservation was made by the imer by the side of the digital program by which display reservation was made by the timer of eceiving terminal equipment, and recording equipment differ, and broadcasting hours overlap, and ecording or a display cannot be performed as reservation.

0075] Moreover, [according to the digital broadcast record system concerning this invention Claim 4)] Digital broadcast is received. The signal of a predetermined transponder is chosen rom the received digital broadcast signal. The signal of a predetermined channel is chosen from he signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal ıf the channel which the transport decoder to output and this transport decoder output is lecoded. [an output means to output the analog signal which the digital signal or the above-ıentioned decoder which the decoder changed into an analog signal and the above-mentioned ransport decoder output outputs and program recording reservation of digital broadcast, program lisplay reservation, or program recording reservation of analog broadcasting] The receiving erminal equipment which has the 1st timer to perform, and analog broadcasting are received. A ıredetermined channel is chosen from the received analog broadcasting signal. The output signal ıf the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs he Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. When the 1st timer of the above has the input of rogram recording reservation, the reservation execution time of the program recording eservation concerned is compared with the reservation execution time of the program recording eservation already performed by the 2nd timer of the above. Since it had composition equipped ıith a detection means to detect whether duplication of program recording time arises, it is ffective in the ability of a user to realize the digital broadcast record system which can avoid uplication reservation of program recording effectively.

0076] Moreover, [according to the digital broadcast record system concerning this invention Claim 5)] Digital broadcast is received. The signal of a predetermined transponder is chosen ·om the received digital broadcast signal. The signal of a predetermined channel is chosen from he signal of the transponder which the 1st tuner to output and this 1st tuner output. The signal f the channel which the transport decoder to output and this transport decoder output is ecoded. [an output means to output the analog signal which the digital signal or the above-ıentioned decoder which the decoder changed into an analog signal and the above-mentioned ·ansport decoder output outputs and program recording reservation of digital broadcast, program isplay reservation, or program recording reservation of analog broadcasting] The receiving

erminal equipment which has the 1st timer to perform, and analog broadcasting are received. A redetermined channel is chosen from the received analog broadcasting signal. The output signal f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs he Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. When the 2nd timer of the above has the input of rogram recording reservation, the reservation execution time of the program recording eservation already performed by the reservation execution time, the 1st timer of the above, or he 2nd timer of the program recording reservation concerned and program display reservation is ompared. Since it had composition equipped with a detection means to detect whether luplication of reservation execution time arises, it is effective in the ability of a user to realize he digital broadcast record system which can avoid duplication reservation of program recording ffectively.

0077] Moreover, [according to the digital broadcast record system concerning this invention Claim 6)] Digital broadcast is received. The signal of a predetermined transponder is chosen rom the received digital broadcast signal. The signal of a predetermined channel is chosen from he signal of the transponder which the tuner to output and this tuner output. The signal of the hannel which the transport decoder to output and this transport decoder output is decoded. The eceiving terminal equipment which has an output means to output the analog signal which the ligital signal or the above-mentioned decoder which the decoder changed into an analog signal nd the above-mentioned transport decoder output outputs, In the digital broadcast record ystem which consists of recording equipment which has the Records Department which records he output signal of the above-mentioned receiving terminal equipment When reservation of the utput program of the above-mentioned receiving terminal equipment is made with the timer /hich performs program recording reservation of digital broadcast, and the above-mentioned imer, just before execution of the reservation concerned A detection means to detect whether it s in a state with the above-mentioned receiving terminal equipment able to output the signal of he reservation purpose program, Since it had composition equipped with an alarm display means o display this when it detected that it is in a state with the above-mentioned receiving terminal quipment unable for this detection means to output the signal of the reservation purpose rogram It is effective in it being avoidable un-arranging [that the program of the intention of a rogram no longer being suddenly displayed while on display, or recording is no longer recorded, nd timer reservation becomes impracticable against a user's will against a user's will].

0078] Moreover, [according to the digital broadcast record system concerning this invention Claim 7)] The signal of a predetermined channel is chosen and outputted from the signal of the ransponder which the 1st tuner which receives digital broadcast, and chooses and outputs the ignal of a predetermined transponder from the received digital broadcast signal, and this 1st uner output. Moreover, the information (EPG information) about the broadcasting hours of a rogram and a broadcast channel is extracted from the signal of a transponder. The signal of the hannel which the transport decoder to output and this transport decoder output is decoded. [an utput means to output the analog signal which the digital signal or the above-mentioned decoder /hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation, or program recording reservation of analog broadcasting] The receiving terminal quipment which has the 1st timer to perform, and analog broadcasting are received. A redetermined channel is chosen from the received analog broadcasting signal. The output signal f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs ne Records Department which records the output signal of the above-mentioned receiving

erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. When program recording reservation of digital roadcast is performed to the 2nd timer of the above The check of whether there is no roadcast time of the recording purpose program just before the recording start by the program ecording reservation concerned, and there is any change in a broadcast channel is performed to he above-mentioned receiving terminal equipment. Since it had composition equipped with a ieans to change the information on the program recording reservation concerned of the 2nd imer of the above when there was change, based on the control signal for the reservation xecution which the 2nd timer outputs, it is effective in the ability to record the recording urpose program certainly.

0079] Moreover, [according to the digital broadcast record system concerning this invention Claim 8)] The signal of a predetermined channel is chosen and outputted from the signal of the ransponder which the 1st tuner which receives digital broadcast, and chooses and outputs the ignal of a predetermined transponder from the received digital broadcast signal, and this 1st uner output. Moreover, the information (EPG information) about the broadcasting hours of a rogram and a broadcast channel is extracted from the signal of a transponder. The signal of the hannel which the transport decoder to output and this transport decoder output is decoded. [an utput means to output the analog signal which the digital signal or the above-mentioned decoder /hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation, or program recording reservation of analog broadcasting] The receiving terminal quipment which has the 1st timer to perform, and analog broadcasting are received. A redetermined channel is chosen from the received analog broadcasting signal. The output signal f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs ie Records Department which records the output signal of the above-mentioned receiving erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. When there is change to a means to acquire EPG iformation from the above-mentioned receiving terminal equipment, and to memorize this, and ie broadcast time or the broadcast channel of the digital program by which program recording eservation is performed to the 2nd timer of the above, Since it had composition equipped with a ieans to change the information on the program recording reservation concerned of the 2nd mer of the above, based on the control signal for the reservation execution which the 2nd timer utputs, it is effective in the ability to record the recording purpose program certainly.

0080] Moreover, [according to the digital broadcast record system concerning this invention Claim 9)] The signal of a predetermined channel is chosen and outputted from the signal of the ransponder which the 1st tuner which receives digital broadcast, and chooses and outputs the ignal of a predetermined transponder from the received digital broadcast signal, and this 1st uner output. Moreover, the information (EPG information) about the broadcasting hours of a rogram and a broadcast channel is extracted from the signal of a transponder. The signal of the hannel which the transport decoder to output and this transport decoder output is decoded. [an utput means to output the analog signal which the digital signal or the above-mentioned decoder hich the decoder changed into an analog signal and the above-mentioned transport decoder utput outputs and program recording reservation of digital broadcast, program display eservation, or program recording reservation of analog broadcasting] The receiving terminal quipment which has the 1st timer to perform, and analog broadcasting are received. A redetermined channel is chosen from the received analog broadcasting signal. The output signal f the 2nd tuner to output and the 2nd tuner of the above Or it sets to the digital broadcast ecord system which consists of recording equipment which has the 2nd timer which performs ie Records Department which records the output signal of the above-mentioned receiving

erminal equipment and program recording reservation of analog broadcasting, or program ecording reservation of digital broadcast. When the broadcasting hours of the digital program vhich the above-mentioned receiving terminal equipment under present recording outputs in said ecording equipment extend, it is detected whether the time to the end of a program of the rogram concerned overlaps the broadcasting hours of the program by which program recording eservation or program display reservation is made at the 1st or 2nd timer of the above. Since it ıad composition equipped with a control means to perform the recording or a display of a rogram according to a predetermined priority when overlapping When there is extension of the roadcasting hours of the digital program under record and the broadcasting hours of a program nd duplication by which timer reservation was made arise, it is effective in the ability to perform utomatic more desirable program recording or a program display.

Translation done.]